the user instruction includes at least one of an addition of at least one line in the plurality of lines, and a movement of at least one of the lines, and

after the modification, the plurality of lines still correspond exactly to contours of the three-dimensional form model.

REMARKS

In response to the Office Action dated July 5, 2002, claims 2, 29, 34, 38, 40 and 45 are amended. Claims 2, 3, 5, 9-22, 29, 34, 35, 37-40 and 45 are now active in this application. No new matter has been added. The indication that the subject matter of claims 9-22 and 37 is allowable is noted with appreciation.

OBJECTION TO THE DISCLOSURE

The Examiner objects to the disclosure as having informalities "a-h". By this response, items "a, b, c & e" have been corrected as suggested by the Examiner.

As to informality "f", it is noted that the points t_0 - t_4, are shown in Fig 11, and as each of these points is an auxiliary point "P". Consequently, the points P are already shown in the drawings and labeled points t_0 - t_4.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102 AND § 103

Claims 2, 5, 29 and 45 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318).

To expedite prosecution, independent claims 29 and 45 are amended to delineate that the modification of the plurality of lines is performed in response to a user

instruction. Further, the user instruction recited in amended claim 29 includes "at least one of an addition of at least one line in the plurality of lines, a movement of at least one of the lines, and a deletion of at least one of the lines", while the user instruction recited in amended claim 45 includes "at least one of an addition of at least one line in the plurality of lines, and a movement of at least one of the lines".

In contrast, Matsuura describes modification of a reference dummy, but does not describe or suggest any user instruction for the modification. Therefore, amended independent claims 29 and 45, and claims 2 and 5 depending from amended claim 29, are patentable over Matsuura.

Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318) in view of Letcher, Jr. (U.S. Patent No. 5,627,949).

Claims 34 and 35 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318) in view of Sato et al. (U.S. Patent No. 5,754,680).

Each of claims 3, 34 and 35 depends either directly or indirectly from amended claim 29, and neither Letcher, Jr. nor Sato et al. disclose or suggest modification of the plurality of lines based on a user instruction as now recited in amended claim 29. Thus, claims 3, 34 and 35 are patentable over Matsuura also, even when considered in view of Letcher, Jr. and Sato et al.

Claims 38-40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sato et al. (U.S. Patent No. 5,754,680).

To expedite prosecution, independent claim 38 is amended to recite, *inter alia*:

> generating, from the second electric data, a third electronic data corresponding exactly to second portions on the surface of the three-dimensional model, the second portions including at least one portion different from any one of the first portions, ...

More specifically, amended claim 38 requires the third electronic data to be generated not directly from the first electronic data, but from the second electronic data, which is generated from the first electronic data. Sato et al. does not disclose or suggest generation of data through a plurality of stages. Thus, amended independent claim 38, and dependent claims 39 and 40, are patentable over Sato et al.

In summary, Applicants submit that amended independent claims 29, 38 and 45, as well as dependent claims 2, 3, 5, 34, 35, 39 and 40 are patentable over Matsuura, Letcher, Jr. and Sato et al., considered alone or in combination, and their allowance is respectfully solicited.

CONCLUSION

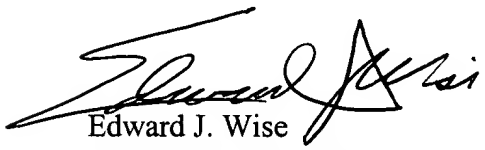
Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this

paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT, WILL & EMERY



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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION

Please amend the specification as follows:

At page 2, the first full paragraph:

When the above-mentioned active stereo method is used, data has a large amount as large as several tens thousands to several hundred thousands points. If the amount of data is so large, there is a serious burden on handling the three-dimensional form data with a computer, or it takes a long [tome] time to display a picture or to operate the data. Thus, processing speed becomes low.

At page 3, the first paragraph after "SUMMARY OF THE INVENTION":

An object of the present invention is to provide [an] a method for generating three-dimensional form data, including characteristic lines desired by a user, from original three-dimensional form data.

At page 8, the second full paragraph:

The curve data generation section 12 generates data on a parametric curve group along the surface of the three-dimensional form model TM1, TM2 by projecting the longitudes [BCM] BCP and meridians [BCP] BCM to the axis AX1.

At page 8, the last paragraph bridging pages 8 and 9:

The three-dimensional form data processor 1 receives three-dimensional form data TD1 on an object obtained by a three-dimensional camera with slit light projection method or transmitted from another computer. The three-dimensional form data TD1 has a high density of points of the object, and it consists of a large amount of data. The screen 2 is set so that it is parallel to a plane including coordinate axes Wx and Wy of world coordinate system, and the three-dimensional form TM1 and a closed surface CCS1 to be explained later are set at positions wherein they can be projected to the screen 2. The three-dimensional form data TD1 may be either of a surface model, a solid model or a wire frame model. The three-dimensional model TM1 may be generated by the form data processor 1. The three-dimensional form data processor 1 generates three-dimensional form data TM3 having an amount of data smaller than that of the three-dimensional from data TM1. The as-received three-dimensional form data TD1 may also be output as the form data TM3. The form data TM3 may be stored in a flexible disk or are supplied through a communication line to another computer.

At page 14, the last paragraph:

Next, meridians [BCP] BCM and longitudes [BCM] BCP, as Bezier curves along the three-dimensional form model TM1 are determined from the auxiliary points $p_{i,j}(t_1)$, ..., $p_{I,j}(t_k)$ on the three-dimensional form model TM1 (step S15). Bezier curves on the three-dimensional form model TM1 are denoted as $R_{I,j}(T)$. Then,

IN THE CLAIMS

Please amend claims 2, 29, 34, 38, 40 and 45 as follows:

2. (Three Times Amended) The method according to claim 29, wherein said [projected group] plurality of lines along the surface of the three-dimensional form model corresponding exactly to contours of the three-dimensional form model comprises a parametric curve group.

29. (Four Times Amended) A computer-implemented method of generating three-dimensional form data to be used in a computer apparatus, the method comprising the steps of:

obtaining an electronic data of a three-dimensional form model;

generating a plurality of lines along a surface of the three-dimensional form model, the plurality of generated lines corresponding exactly to contours of the three-dimensional form model; and

modifying the plurality of generated lines [by adding] in response to a user instruction, wherein

the user instruction includes at least one of an addition of at least one line in the plurality of lines, [at least one line, moving] a movement of at least one of the lines, [or deleting] and a deletion of at least one of the lines, and [so that]

after the modification, the plurality of lines still correspond exactly to contours of the three-dimensional form model.

34. (Amended) The method according to claim 29, further comprising the step of:

generating a summary data for representing [said second set of contour] the modified plurality of generated lines, wherein a quantity of the summary data is smaller than a quantity of the obtained three-dimensional form data.

38. (Twice Amended) A computer-implemented method of processing an electronic data representing a three-dimensional model, the method comprising the steps of:

receiving a first electronic data of a three-dimensional model of an object which has been acquired on the object;

generating a second electronic data corresponding exactly to first portions on a surface of the three-dimensional model, wherein a capacity of the second electronic data is smaller than that of the first electronic data; and

generating, from the second electric data, a third electronic data corresponding exactly to [a] second [portion] portions on the surface of the three-dimensional model, the second portions including at least one portion different from any one of the first portions, wherein

a capacity of the third electronic data is smaller than that of the first electronic data.

40. (Amended) The computer-implemented method according to claim 39, wherein positions of the first or second portions are changed by changing the [prescribed] predetermined lines to be projected onto the three-dimensional model.

45. (Twice Amended) A computer-implemented method of generating three-dimensional form data to be used in a computer apparatus, the method comprising the steps of:

obtaining an electronic data of a three-dimensional form model;

generating a plurality of lines along a surface of the three-dimensional form model, the plurality of generated lines corresponding exactly to contours of the three-dimensional form model; and

modifying the plurality of generated lines [by adding] in response to a user instruction, wherein

the user instruction includes at least one of an addition of at least one line in the plurality of lines, [at least one line, or moving] and a movement of at least one of the lines, and

after the modification, [so that] the plurality of lines still correspond exactly to contours of the three-dimensional form model.